

Long Beach Bicycle Master Plan Needs Analysis

The purpose of reviewing the needs of commuter and recreational bicyclists is twofold: (1) it is instrumental when planning a system which must serve both user groups of commuter and recreational riders and (2) it is useful when pursuing competitive funding and attempting to quantify future usage and benefits to justify expenditures of resources.

Bicycle Commuter Needs

Commuter bicyclists in Long Beach range from employees who ride to work to a child who rides to school. Millions of dollars nationwide have been spent attempting to increase the number of people who ride to work or school, with moderate success. Despite this fact, Long Beach has a great potential to increase the number of people who ride to work or school because of (a) the moderate size of the city, (b) moderate density residential neighborhoods near employment centers, (c) a city of easy to moderate terrain (d) favorable climate throughout most of the year, (e) high percentage of residents who work in the city, and (f) a bicycle station located in the downtown employment center. Key bicycle commuter needs in Long Beach are summarized below.

- Commuter bicyclists typically fall into one of three categories: (1) adult employees, (2) younger students (typically ages 7-15), and (3) shoppers.
- Commuter trips range from several blocks to up to five miles or more.

**Bicycle Commuter
Needs, continued**

- Commuters typically seek the most direct and fastest route available, with regular adult commuters often preferring to ride on arterials rather than side streets.
- Commute periods typically coincide with peak traffic volumes and congestion, increasing the exposure to potential conflicts with vehicles.
- Places to safely store bicycles are of paramount importance to all bicycle commuters.
- Major commuter concerns include changes in weather (rain), riding in darkness, personal safety and security.
- Rather than be directed to side streets, most commuting adult cyclists would prefer to be given bike lanes or wider curb lanes on direct routes.
- In general, a primary concern to all bicycle commuters is uncontrolled crosswalks and intersections with no stop sign or signal control.
- Commuters generally prefer routes where they are required to stop as few times as possible, thereby minimizing delay.
- Students riding the wrong-way on a street are common and account for the greatest number of recorded accidents in California, pointing to the need for safety education.

**Recreational Bicycle
Needs**

The needs of recreational bicyclists in Long Beach must be considered, as they are often different from commuter bicycle needs. Most recreational cyclists are riding in neighborhoods to destinations such as parks, schools, beaches, etc. Recreational cycling in Long Beach is attractive because: (a) a variety of recreational destinations such as parks, beaches, river paths, Queensway Bay, etc (b) moderate to easy terrain (c) moderate climate throughout most of the year (d) a diverse population of children, adults and seniors who enjoy leisure time on a bicycle.

Recreational Bicycle Needs, continued

The following points summarize recreational needs:

- Recreational bicycling in Long Beach typically falls into one of three categories; (1) exercise, (2) non-work destinations such as parks or beaches (3) touring, long distance treks or events.
- Recreational users range from healthy adults to children to senior citizens. Each group has their own abilities, interests and needs.
- Directness of the route is typically less important than routes with less traffic conflict. Visual interest, shade, protection from weather elements, moderate gradients or other "comfort" features are also very important.
- People exercising or touring often prefer a loop route rather than having to backtrack.

General Bicycle Safety Needs

Safety ranks as one of the top concerns for bicyclists when considering riding either for commuter or recreational purposes. Although there are bicycle safety programs in Long Beach held through the City's Family Safety Initiative in conjunction with the Neighborhood Services Bureau, Police Department, Public Health Bureau, Parks and Recreation volunteer programs, and League of American Bicyclists Bike Ed course conducted by the Long Beach Cyclists, there is no standardized reporting system. Thus, it is difficult to determine their effectiveness. Other communities with successful bicycle safety programs have found such programs to be of great value in improving safe cycling.

Although there were no outstanding safety hazards noted during field research conducted for this Plan, bicyclists mentioned some of their safety concerns through the public workshops. These include potholes, railroad tracks, narrow streets in the downtown area, multiple driveways in commercial districts and neighborhoods, poor or no lighting along some bike paths, and increased speed of traffic.

Identified Needs

Public Workshops

Two sets of public workshops were held in Long Beach on April 18, 19, 25, and 26 and on July 25, 26 and August 1 and 2 during the year 2000. Announcements for the public workshops were made through the City of Long Beach Public Information Office, local newspapers, ten bicycle shops, and the Bikestation. Workshops were held at four different neighborhood locations for residents' convenience. Spanish and Khmer translators were available at two of the meetings. At the first set of workshops, attendees were asked to identify their bicycle needs both verbally and on a written survey. They were also asked to show on large-scale maps of the City their current riding habits and views on bicycling opportunities and constraints in Long Beach. A presentation was made of preliminary recommended routes and policies at the second set of workshops.

In addition to the two sessions of workshops mentioned above, the public was given a final opportunity to comment on the Draft Bicycle Master Plan at a single workshop held on February 12, 2001 during the 30 day review process. The same public outreach and notification that was done for the previous workshops were carried out for the final public workshop and translators were also provided.

Bicycle Survey

Additionally, 1,000 surveys were distributed at ten local bicycle shops and the BikeStation, two YMCAs, at City Hall and in coordination with the Long Beach Unified School District. Surveys were available in English and Spanish. There were 56 surveys returned, of which approximately half were from the general adult public and the other half were from school aged children. Results of the surveys, workshop and subsequent correspondence, especially from the Long Beach Cyclists organization, and field review are presented in Figures 3 through 7. A sample survey and additional detailed comments are included in Appendix A and B.

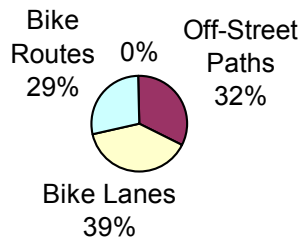
Although a statistically insignificant number of surveys were returned, there are deductions and trends that can be summarized:

***Bicycle Survey,
continued***

- The preferred type of bicycle facility is on street bike lanes, which ranked as number one at 45%.
- The majority of riders, 52%, ride their bicycles occasionally 1-6 times per month. The daily riders only make up 23% of bicyclists.
- The trip purpose for bicyclists fall into highest order of use: 71% recreation, 46% shopping, 46% other, 36% work and 29% school.
- Distance from work or school is quite close in proximity to home with 62% stating that their distance is 1-5 miles. Longer distances rank more evenly with 13% at 6-10 miles and 14% at 11 miles or more.
- The primary reason for not riding a bicycle more often is the lack of bikeways, which ranked number one by 32% of the respondents. The other number one rankings noted as reasons not to cycle are 18% for weather, 16% for safety and 16% for parking.

As part of the survey, people were also given the opportunity to list specific comments about constraints and opportunities. These comments have been organized by category: marketing or education, connectivity or multi-modal, activity centers, maintenance, signage, signals or intersections, safety, parking and other.

**Figure 3:
Most Preferred Bikeway Facility**



**Figure 4
Current Level of Bicycling**

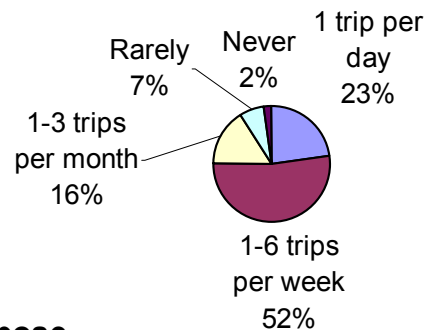
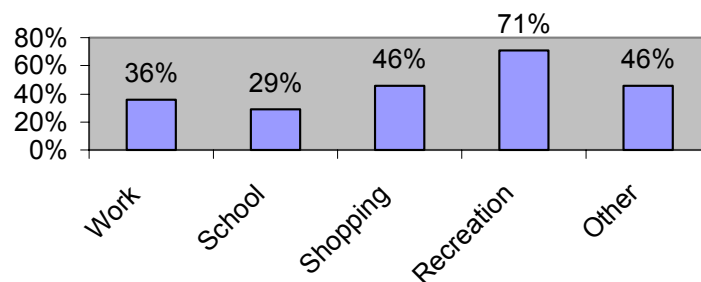
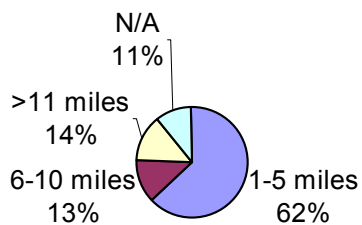


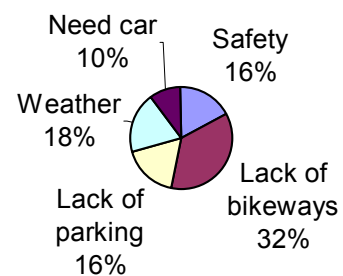
Figure 5 Bicycle Trip Purpose



**Figure 6
Distance of home from work/school**



**Figure 7
Factors inhibiting more frequent riding**



***Bicycle Survey,
continued***

Additional comments concerning constraints and opportunities include:

- Marketing and education is mentioned as a top concern with 43% of the respondents seeing the need for education to schools, adults, courts and general classes for the public. Suggestions of providing bike route maps are also included as part of a marketing campaign by 7% of the respondents. In addition marketing campaigns to Chambers of Commerce and the Convention and Visitors Bureau was mentioned in workshop discussions.
- The importance of access to activity centers such as the colleges, entertainment areas, shopping and public buildings is important to 31% of the respondents.
- Parking is another issue for bicyclists, generating comments by 29% of the respondents. Various types of parking issues including more parking in general, location of parking and types of parking racks was mentioned.
- Safety issues are mentioned by 28% of the survey respondents who have concerns ranging from lighting to law enforcement.
- Improvements in signals, intersections and auto lane issues generated a response by 27% of the survey respondents who want to see things such as signal detectors sensing bicycles, wider curb lanes and a variety of other improvements.
- Signage is an issue for 27% of the respondents asking for general signs, directional signs, access signs and warning signs.
- The concern for maintenance issues ranging from general maintenance to potholes and resurfacing streets is mentioned by 22% of the respondents.

***Bicycle Survey,
continued***

- Multi-modal connections are important to 14% of the respondents who want to have racks on buses and parking at light rail stations.
- Other miscellaneous comments ranged from 7% suggesting a bicycle coordinator, 5% hoping for more funding dedicated to bicycles , 4% wanting bicycle incentives, 4% suggesting that all capital improvements comply with the plan and 2% of the comments ranged from issues referring to a bicycle advisory committee, bathrooms along the river, car conflicts, international bicycle standards, changing facilities and turn outs for diagonal railroad crossings.

People were also given the opportunity to identify specific streets where they thought there were opportunities for bicycle paths or routes, as noted in Table 3.

This preliminary list of routes provides a base map to consider, especially since active bicycle riders suggested the streets. The suggested routes which rank more than 9% on the survey are mentioned below:

- All river bed bicycle paths in or near Long Beach, which includes the San Gabriel River, Los Angeles River and Coyote Creek.
- Clark Avenue which runs north/south through the City of Long Beach
- Improvements on Pacific Coast Highway, an existing east/west route, known as the bikecentennial national bikeway system throughout the United States.
- Second Street as an east/west route near downtown Long Beach to the Belmont Shore area .

Bicycle Enforcement

Many potential bicyclists cite the fear of traffic as one of their main objections to riding a bicycle in an urban community such as Long Beach.

In order to attempt to make bicycling safer, the Long Beach Police Department enforces all traffic laws, for bicycles and motor vehicles as part of their regular duties. This includes bicyclists who break traffic laws, as well as motorists who disobey traffic laws and make the cycling environment more dangerous. The level of enforcement depends on the availability of officers.

It is difficult to assess the effectiveness of police enforcement, since there is no monitoring system in place.

Accident Analysis

Bicycle related accidents were collected for the past three year from 1997, 1998 and 1999 in Long Beach. Accident data was generated from both the City of Long Beach Police reports and the California Highway Patrol SWITRS data. Both the Long Beach Police reports and SWITRS were cross referenced for duplicate as well as additional accidents. The total bicycle related accidents for the three years is 936, with the following breakdown :

- 1997 = 294 bicycle related accidents
- 1998 = 345 bicycle related accidents
- 1999 = 297 bicycle related accidents

Given the 936 accidents reported during the three year period, it seems that bicycle related incidents are to be considered as an important issue in Long Beach. Compared to other communities in California based on the number of incidents per 1,000 persons, Long Beach's rate is approximately 0.71% calculated by an average of 300 accidents each year and a 1995 estimated population of approximately 425,000 residents. This 0.71% rate of incidents is slightly above the average of 0.67% of incidents per 1,000 persons in over 30 other California cities.

Like most communities, there are no accident areas of high

**Accident Analysis,
continued**

concentration. In fact, in over three years only one accident was reported at the same location twice. The accident incidents are scattered throughout the City with no single intersection or major street having the most reported accidents. In addition, the accidents are reported on major streets with high traffic volumes as well as in neighborhoods with less traffic.

The data indicates that there is not a huge variance as to which days accidents occur. Thursday accounts for the highest percentage of accidents at 20% while Wednesday, Saturday and Sunday all account for the lowest percentage at 12%.

Most accidents occur in the summer months of July and August with a percentage of 11% and 13% respectively. All other months range from 5% to 9% each month.

The majority of accidents occur during the afternoon and evening hours at a rate of 79%, while only 21% of the accidents occur during the morning hours.

The number of bicycle-related accidents hasn't changed much in the past three years, so it is difficult to assess the effectiveness of the safety program and police efforts. However, since the accident rate is within the range of the state average, these efforts are likely helping.

**Traffic and Air
Quality Benefits**

A key goal of the Bicycle Master Plan is to maximize the number of bicycle commuters in order to help achieve larger transportation goals such as minimizing traffic congestion and air pollution. In order to set the framework for these benefits, national statistics and policies are used as a basis for determining the benefits to Long Beach.

- Currently, nearly 3 million adults (about 1 in 60) commute by bicycle. This number could rise to 35 million if adequate facilities were provided (according to a 1991 Lou Harris Poll).
- Bicycling is one of the most popular forms of recreational activity in the United States, with 46% of

**Traffic and Air
Quality Benefits,
continued**

Americans bicycling for pleasure. These figures indicate that based on the total population of 425,000 Long Beach residents in 1995, more than 195,000 residents in Long Beach do or would like to bicycle for pleasure. If nothing else, this indicates a latent demand for facilities and a potent constituency to push for better facilities. Another way of saying this is, if you build it, they will come.

- The latent need for bicycle facilities, versus actual bicyclists, is difficult to quantify; we must rely on evaluation of comparable communities to determine potential usage.
- Mode split refers to the choice of transportation people make whether for work or non-work trips. Currently, the average household in the U.S. generates about 10 vehicle trips per day. Work trips account for less than 30% of these trips on average.
- Using the 1990 U.S. census data adjusted for current population numbers, about one percent all employed Long Beach residents commute primarily by bicycle. This does not include those who ride to work less than 50% of the time, nor does it always include those who may walk or ride to transit and list transit as their primary mode. Based on a total employed population of 211,833 in 1990 approximately 3,175 people in Long Beach would use a bicycle to commute.
- Nationally, the mean travel time for bicycle and pedestrian commuters was 14.2 minutes, which translates roughly into a commute distance of about 3.5 miles for bicyclists.
- The U.S. Department of Transportation in their publication entitled National Walking and Bicycling Study (1995) sets as a national goal the doubling of current walk and bicycling mode shares by the year 2010, assuming that a comprehensive bicycle system was in place. This would translate into a full-time commute bicycle mode share of 2.0% or about 4,000 commuters in

Long Beach. However, adding in the estimated number of commuters who bicycle occasionally, bike-to-transit, and students at local schools, the average number of daily bicyclists in Long Beach increases to over 25,000, with an estimated 50,000 bicycle commuters by 2010. These bicyclists will be saving an estimated 35,000 vehicle trips and over 135,000 vehicle miles per year.

- The combined air quality benefits of these future bicycle commuters over the next 20 years are an annual reduction of tens of thousands of pounds of reduced air pollutants like particulate matter (PM₁₀), nitrogen oxides (NOX) and reactive organic gases (ROG). The annual reduction of pollutants is estimated at 2,457 pounds of PM₁₀, 6,660 pounds of NOX and 9,694 pounds of ROG.

Table 3 provides a detailed summary of current and future bicycle demand and benefits.

Table 3 Bicycle Demand and Air Quality Benefits

Population (1990 census)	425,000
Land area (estimated)	50 sq. miles
Population Density	8,500 persons/sq. mile
Estimated Long Beach residents who would like to bicycle	195,000
Current bicycle commute mode share (1990 census, full-time identified bike commuters)	1,929 (.97%)
Estimated current bicycle commuters, including students, part-time commuters, and bike-to-transit	25,175 (5%)
Potential future bike commuters, full-time	4,858 (2%)
Potential future bike commuters, including students, part-time commuters, and bike-to-transit	44,492 - 70,167*
Current reduced vehicle trips/year	35,739
Current reduced vehicle miles/year	133,522
Current reduced PM ₁₀ /lbs/year	2,457
Current reduced NoX/lbs/year	6,660
Current reduced ROG/lbs/year	9,694

* The range of potential commuters depends on the implementation rate of the proposed bikeway system. The higher end number reflect the potential ridership once the network is completely built-out, while the lower number reflects the implementation of the short-term improvements only.